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Chemical Reactivity Worksheet, NOAA

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Two chapters have both a technical and human side. In one chapter, Braterman writes of the tragedy of the execution of Lavoisier, the “father of modern chemistry,” during the French Revolution. Another chapter focuses on Haber, whose production of ammonia and nitric acid helped to prolong WW I; today he might have been tried as a war criminal for his activities. The book contains little or no new material but is extremely readable, even for those with limited scientific training. Extensive chapter endnotes contain additional readings for each essay along with chemical equations that add enrichment but are not essential for understanding chapter contents. A glossary supports the text. An excellent resource for general readers with a wide interest in all aspects of natural science.

Summing Up: Highly recommended. ★★★ Lower- and upper-division undergraduates and general audiences.—C. G. Wood, formerly, Eastern Maine Community College

50-2664 QD561 2012-932899 MARC
Burgot, Jean-Louis. **Ionic equilibria in analytical chemistry.** Springer, 2012. 770p index afp ISBN 1441983813, \$229.00; ISBN 9781441983817, \$229.00

Burgot (Professeur Honoraire des Universités, France) presents the properties of water and the equilibria that can be established in it. In the foreword, James Butler (emer., Harvard; *Ionic Equilibrium*, 1964) refers to the content as “the ‘arithmetic’ of quantitative analytical chemistry.” The author discusses and efficiently compiles many wet chemical methods. Though there are examples “taken from the fields of inorganic and organic chemistries and even from that of biochemistry,” their current relevance is not clear. Instrumental methods have extensively replaced titrations and wet chemical methods. The documentation of this chemistry is becoming of more historical interest than practical. While the purpose of the book is not to justify the continued use of wet chemical methods, it would have been useful to compare the sensitivity of some of the methods with common instrumental methods. Most disappointing was a complete absence of cited references; a brief bibliography lists only ten texts, more than half of them written in the 1960s-70s. This may be indicative of the lack of new developments in the field and movement away from such methods. Burgot and Butler are certainly correct, however, that the details of solution chemistry remain important and must be understood and appreciated. **Summing Up:** Recommended. ★★ With reservations. Researchers/faculty and professionals/practitioners.—J. Allison, *The College of New Jersey*

📄 **50-2665** [Internet Resource]
Chemical Reactivity Worksheet, NOAA.
URL: <http://response.restoration.noaa.gov/crw>

[Visited Oct'12] This software package, produced by NOAA's Office of Response and Restoration, can be freely downloaded from their website. The *Chemical Reactivity Worksheet* is designed to predict interactions between common chemicals within a chemical mixture. The program does this by assigning the chemicals in the database to a reactive group class. It then compares each of the possible binary combinations in the mixture against a list of known reactivities between those reactive groups. The results are shown in spreadsheet format with the predicted reactivity codes at the intersection between the column and rows containing the two chemicals being analyzed. Clicking on this cell brings up a table of predicted interactions. Interactions are limited to binary combinations. This is probably fine in most cases, although examples of binary reactions requiring a catalyst to proceed would not be found. Mixtures can be saved for future use or modification.

The database contains about 5,000 compounds, but users can add custom entries. Since the reactivity is determined by reactive group class, careful choice of that parameter is necessary for all new entries. Users can add information about the compound, e.g., physical form, but this will not affect the predicted reactivity. Each reactivity prediction includes a hazard summary, any potential gasses that might be produced, and documentation for both of these predictions. The program appears to run on the “better safe than sorry” model, so lists can get pretty extensive. The intrinsic hazards for each chemical can also be displayed. The program is fairly basic and simple to use, with a complete tutorial available to guide users through each step. The print function is rudimentary, and it can be a task to print the desired reports. This resource will primarily be of interest to those who deal with chemical mixtures such as lab waste coordinators. **Summing Up:** Recommended. ★★ Researchers/faculty and professionals/practitioners.—J. H. Glans, *Sacred Heart University*

Earth Science

50-2666 QC989 2011-45562 CIP
Alcamo, Joseph. **Life in Europe under climate change,** by Joseph Alcamo and Jørgen E. Olesen. Wiley-Blackwell, 2012. 290p index ISBN 9781405196192, \$119.95; ISBN 9781405196185 pbk, \$79.95

The several hundred books on climate change that this reviewer has perused or read/reviewed comprise only a tiny fraction of the thousands of works published on the subject. However, books by UN- or EU-affiliated authors have a pattern of consistent quality and candor, while American books with official linkages tend toward an academic style, and may show inconsistent quality and an avoidance of controversial issues. This work by Alcamo (chief scientist, UN Environmental Programme) and Olesen (Aarhus Univ., Denmark) is content-rich and beautifully organized and produced. After a concise, candid overview of climate change science, the remainder of the book offers reviews of topics such as summer/winter temperatures, storms, precipitation, floods and drought, food- and water-related diseases, crops, trees and shrubs, biogeography and diversity, and fisheries. Maps and other illustrations along with numerous chapter notes/references on the geographic distribution of climate change effects over time in Europe support the text. No comparable, single-volume book covering climate change effects in the US matches this compilation. An introduction by the EU Commissioner for Climate Action notes that the book demonstrates that mitigation and adaptation to climate change are the challenges of current times. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals; general audiences.—F. T. Manheim, *George Mason University*

📄 **50-2667** [Internet Resource]
Berkeley Earth
URL: <http://berkeleyearth.org/>

[Visited Oct'12] The Berkeley Earth Surface Temperature project utilizes a team of physicists, climatologists, and environmental specialists working with support from the US Department of Energy and other groups, organized under the auspices of the nonprofit Novim. The project was founded in 2010 to “contribute to a clearer understanding of global warming based on a more extensive and rigorous analysis of available historical data.” The goal is to make it easier for those interested in climate science to participate in research and analysis. To meet this